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EXTENSION THE FARM AND FARM HOME MAGAZINE

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THE PICTURE ON THE COVER

Tobacco needs clean cultivation to grow well and yield well. That's why this progressive tobacco farmer of the Package Programme District, West Godavari, Andhra Pradesh, sees to it that the crop gets three to four interculturings.

—Photo by R. Paul

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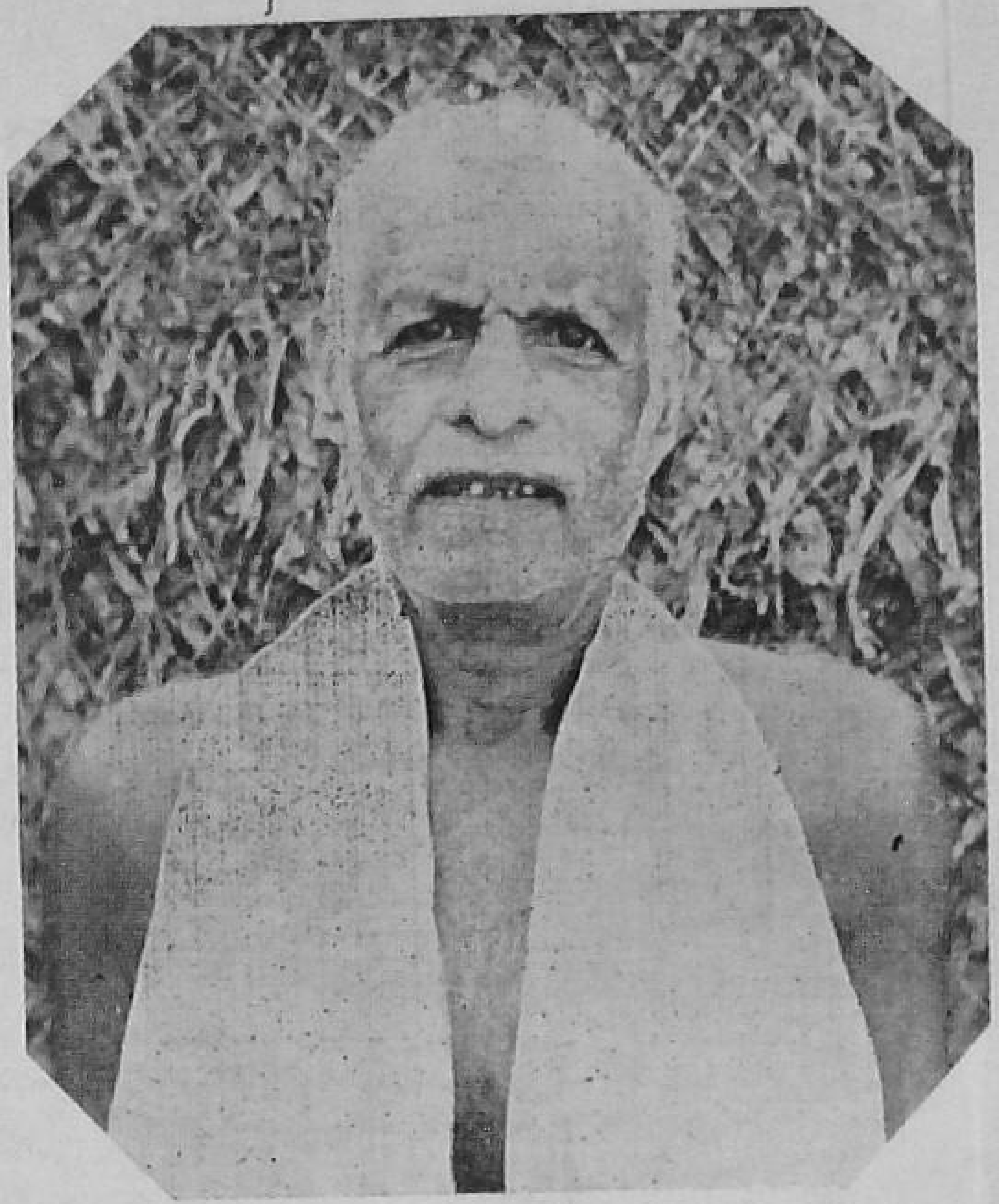

SURE, MIXED FARMING IS A BETTER FARMING

By R. HALI

"CHANGE over to mixed farming pattern, if you want to keep your farming always paying," this is the advice which a 70-year old Kerala farmer wants to give to young farmers. The farmer, Shri Vargheese, bases his advice on his 60 years' experience and association with the soil.

His own farm is an example of the advice he gives. On his three-acre plot, he grows banana, yam, tapioca, elephant yam and pulses, all in the same season. Such a combination fetches a handsome yearly profit.

This is how he practices mixed farming.

* February is a busy time for Shri Vargheese when he plants banana suckers fifteen feet apart. He follows up by sowing elephant yam cuttings in the centre. Yam cuttings are also sown on the same day on the four sides of the elephant yam.
* Just after the first showers in March, two tapioca cuttings are planted on two sides of the elephant yam cuttings. Broadcasting of some pulses in the land, if any left, completes the sowing operations.
* At the time of planting, he gives only a cow-dung—wood-ash mixture as a basal dressing. Banana gets three pounds, while elephant yam, yam and tapioca receive one pound each.
* According to Shri Vargheese, timely top-dressing is a very important operation. Once in thirty days after a light earthing-up, he applies cow-dung,

wood-ash and green manure to every plant. But tapioca gets always F.A.C.T. fertilizer mixture, ¼ pound per tree, once in 30 days as top-dressing.

* Banana and yam are ready for harvest in January but elephant yam is taken from September. Tapioca is collected by December.

This way 380 rupees are almost assured from an acre of the plot. Banana contributes about Rs. 140, and an equal amount comes from elephant yam and yam. A hundred rupees can be considered as a safe sale-proceeds from tapioca.

With this much profit in hand, Shri Vargheese declares "I have found that mixed farming is the best way to get maximum profit from my farm."

This is Shri Vargheese's farm which yields Rs. 380 to an acre

A sapota bridge-grafted on *rayon* root-stocks

IF IT IS SAPOTA YOU SHOULD TRY GRAFTING

By I. A. SAYED

YOU should always propagate sapota by grafting, if you want to get healthy, high-yielding trees.

Until about a decade ago, farmers used gooteeing for multiplying sapota. But it is a very slow and uncertain process; gootees take very long to be ready for planting in the main field and then 30 to 40 per cent of them die while they are being removed from the mother plant.

For raising good healthy grafts, it is, however, necessary to have a suitable root-stock. Sapota seedlings make a poor root-stock because of their slow growth, and shallow root system.

Research work carried out during recent years shows that *rayan* (*Manilkhara hexandra*) is the best root-stock for sapota.

Sapotas on *rayan* stocks gave 50 per cent more yield than gootees and double than those raised on sapota stock. Also the trees raised on *rayan* stock are healthy and remain so even after two decades.

Rayan also known as *khirni* or *pala* grows wild in many parts of Gujarat. To raise *rayan* seedlings, soak the seeds in warm water overnight, and sow in well-prepared, raised beds. When the seedlings are six inches high, pot them. You can as well use self-sown seedlings for grafting which can be

Grafted sapotas always yield more

collected from the jungles. To obtain a clean stem for grafting, check the growth of the side shoots that arise on the stem up to about a foot from the ground by pruning regularly.

Even if you have a sapota garden raised from *gootees*, you can provide support to the existing trees with *rayan* seedlings. Plant one *rayan* seedling close to each tree, and when it is fully established, graft it to the tree by the bridge grafting method. Also graft two or three most vigorous shoots arising from the *rayan* seedling to the tree trunk.

By using *rayan* seedlings as support, you will be saving in the cost of irrigation. Usually sapota needs a large amount of water, but as the roots of *rayan* go very deep into the soil, you will have to irrigate less. Also there is no fear of such trees being uprooted due to strong winds as happens when raised on sapota root-stocks or when not supported by *rayan* seedlings.

That is why more and more farmers are giving up the old practice of propagating sapota by *gootee* and are changing over to grafting. You too should take to grafting this time.

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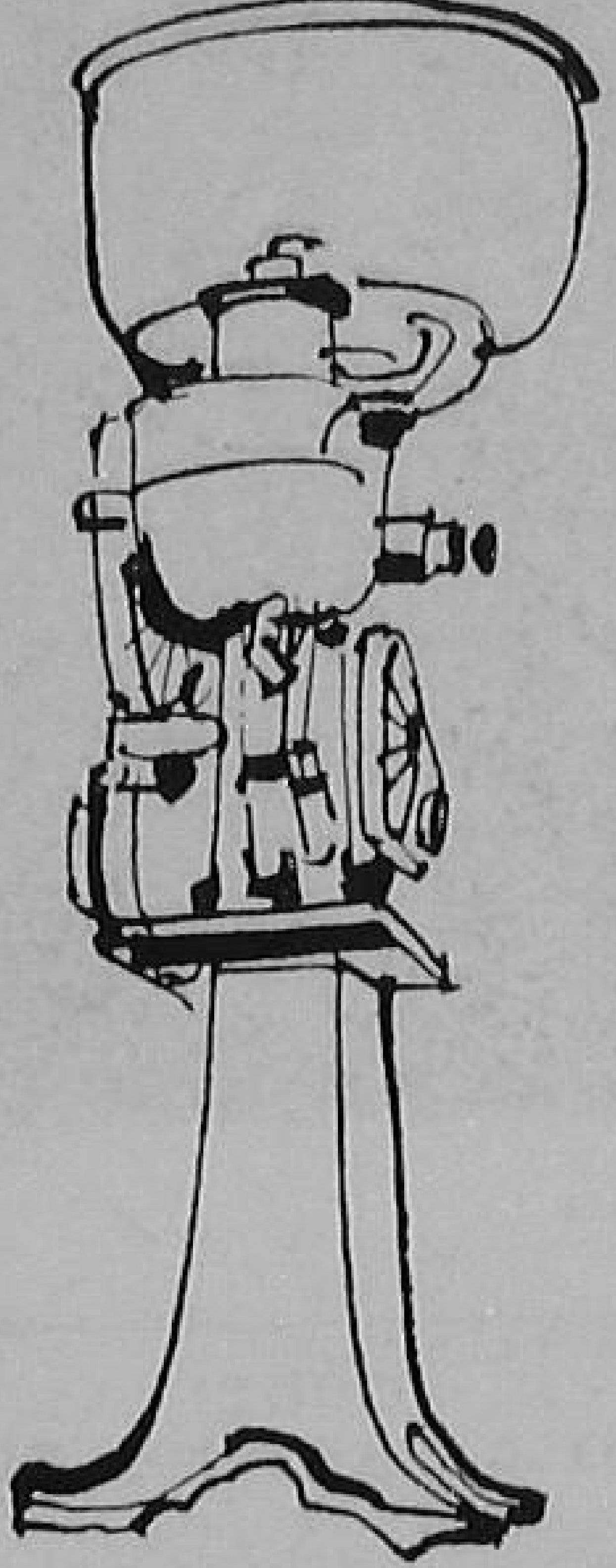


CREAM SEPARATOR

By HARBANS SINGH

QUITE a few farmers today are using cream separators for obtaining fresh cream. They find the machine very convenient, simple to operate and cheap to maintain. More are going in for separators in areas where milk is available in sufficient and large quantities.

However, to get the best results, it is very necessary that the cream separator is properly looked after.

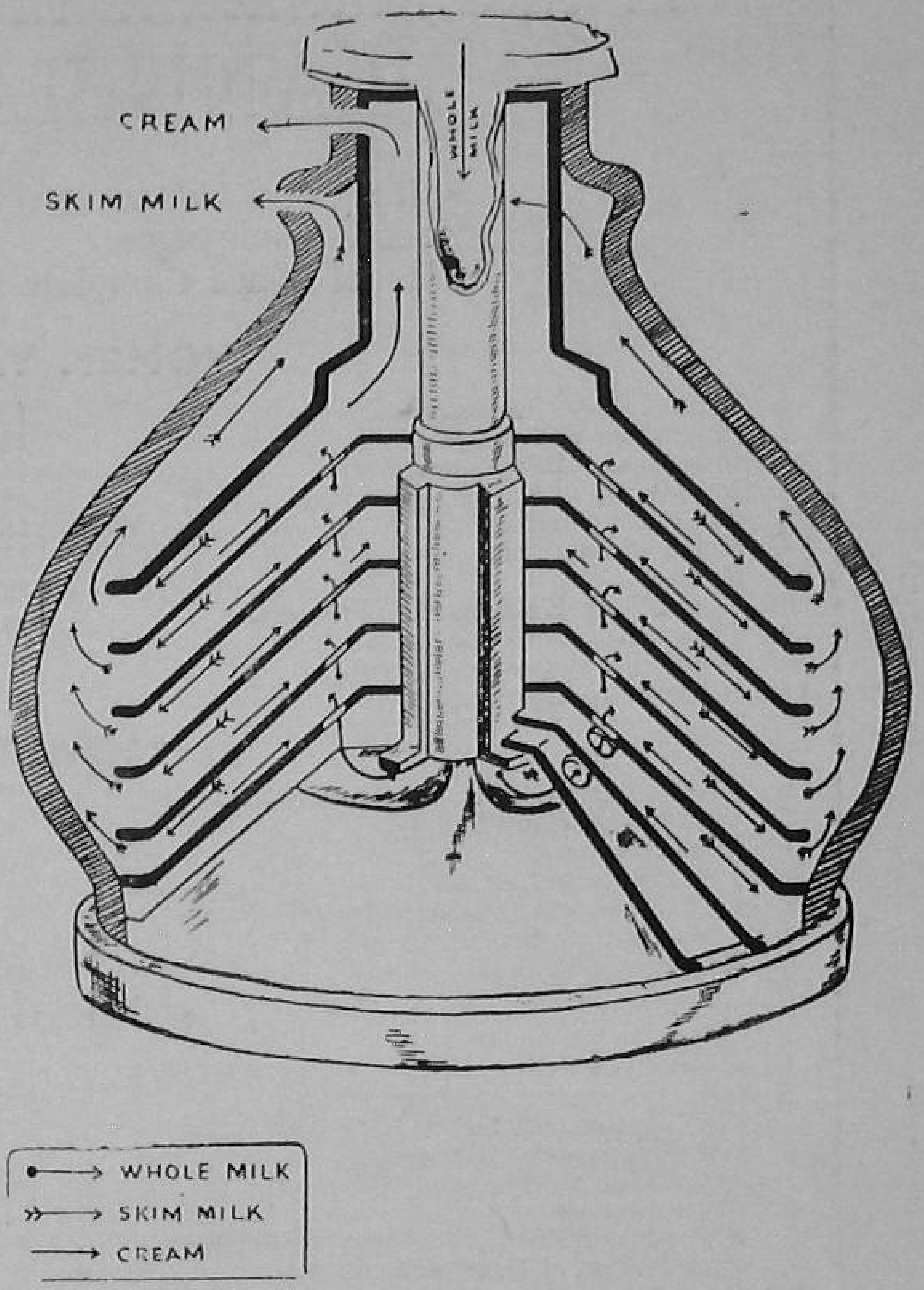
First, milk (that is to be separated) should be clean. The dirt in the milk collects in the bowl of the separator, and clogs the bowl passage, which results in loss of butter fat. Hence, strain the milk through a double muslin cloth before pouring it in the separator.

Keep the separator extra clean. Soon after use, pass enough clean warm water through the machine. This will wash away all the milk particles sticking to the parts of the separator that have come in contact with the milk, and rinse them with cold or lukewarm water. Then wash them thoroughly with warm water and soda. Do not use soap. Finally, rinse all the parts with plenty of boiling water. Allow the parts to dry and store them in a clean place, free from dust and insects. Keep the separator bowl dis-

mantled except while in use. If the separator is left unwashed for a number of hours, bacteria and moulds grow in the milk left in the bowl. The cream during the following separation gets highly contaminated with those micro-organisms.

You need to take special care in washing the bowl discs and the rubber ring. Wash the discs by placing them in a pail and moving them up and down rapidly with about one inch stroke, first in cold, then in hot water containing soda. Next, rinse up in clean scalding water and dry. You should rinse the rubber ring in warm water, taking care not to stretch it. Do not hang the rubber ring on a nail or peg. Lay it flat. Keep oil or butter fat away from the ring, as this is harmful for rubber.

The cream separator should be kept well-balanced on a solid and level foundation. The best type of foundation is the one made of concrete. It should be set firm and remain so while in use. The machine should always be kept well-lubricated.



The figure shows the passage of milk in a separator bowl

Always run the machine steadily and smoothly. Of course, there will be slight vibrations of the bowl when you start or stop the machine. Never attempt to remove the milk or cream spout while the bowl is running. Always allow the bowl to stop on its own accord. Maintain a constant bowl-speed throughout the entire run. If you slacken the speed of the bowl, butter fat will be lost.

The separator must be started slowly and the speed increased gradually. As soon as the correct speed has been obtained, the turning of the crank handle should be maintained at an even speed. Do not revolve the handle with jerks. Avoid skimming at more than the rated capacity of the machine. Attain the maximum speed, before the milk is allowed to enter the machine. Pass a little warm water through the machine before the milk is allowed to enter it. This will warm up the metal to the temperature of the milk. Also feed the separator evenly.

With this much care, your cream separator will give you good service.

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Tobacco fields are pot-irrigated once or twice a day

THE SOIL IS ALMOST SAND

but the TOBACCO is good

ON the sea-shore of northern Kerala, the 2,000 acres on which chewing tobacco is grown are almost pure sand. But that does not prevent local farmers from getting as much as 2,000 pounds of leaves from an acre. How such a good yield of tobacco can be obtained makes a very interesting story of what intensive cultivation can do even where the conditions are not so favourable. And this is not all. The paddy crop which follows tobacco, yields 4,000 to 5,000 pounds an acre.

The farmers sow the seed of local chewing varieties in raised nursery beds during August. Just one ounce of seed sown suffices for transplanting an acre of land. The beds are 12 feet long and 4 feet wide.

A good tobacco crop—result of intensive cultivation

Beds are manured with small doses of cattle manure and fish manure. Seedlings are transplanted in the field during October and November. The field is ploughed well and furrowed nine inches deep and at a four feet distance.

Compost manure, at ten cartloads to an acre, is put in the furrows to a height of six inches and is later covered up with an inch of soil. Seedlings are transplanted during October-November 1½ to 2 feet apart in these furrows. Weeding is done five to six times.

The land is irrigated very frequently. Pot-watering is done once or twice a day. For this purpose, small ponds are dug up well in advance in the field itself.

When a plant has put forth 16 leaves, the terminal bud is nipped off. No auxillary bud is allowed to grow since it affects the quality of leaves.

In addition to compost, nearly 8,000 pounds of fish manure, very cheap in these parts, is given in three doses ; the first one 20 days after planting, the second 25 days later and the third one 15 days after the second one.

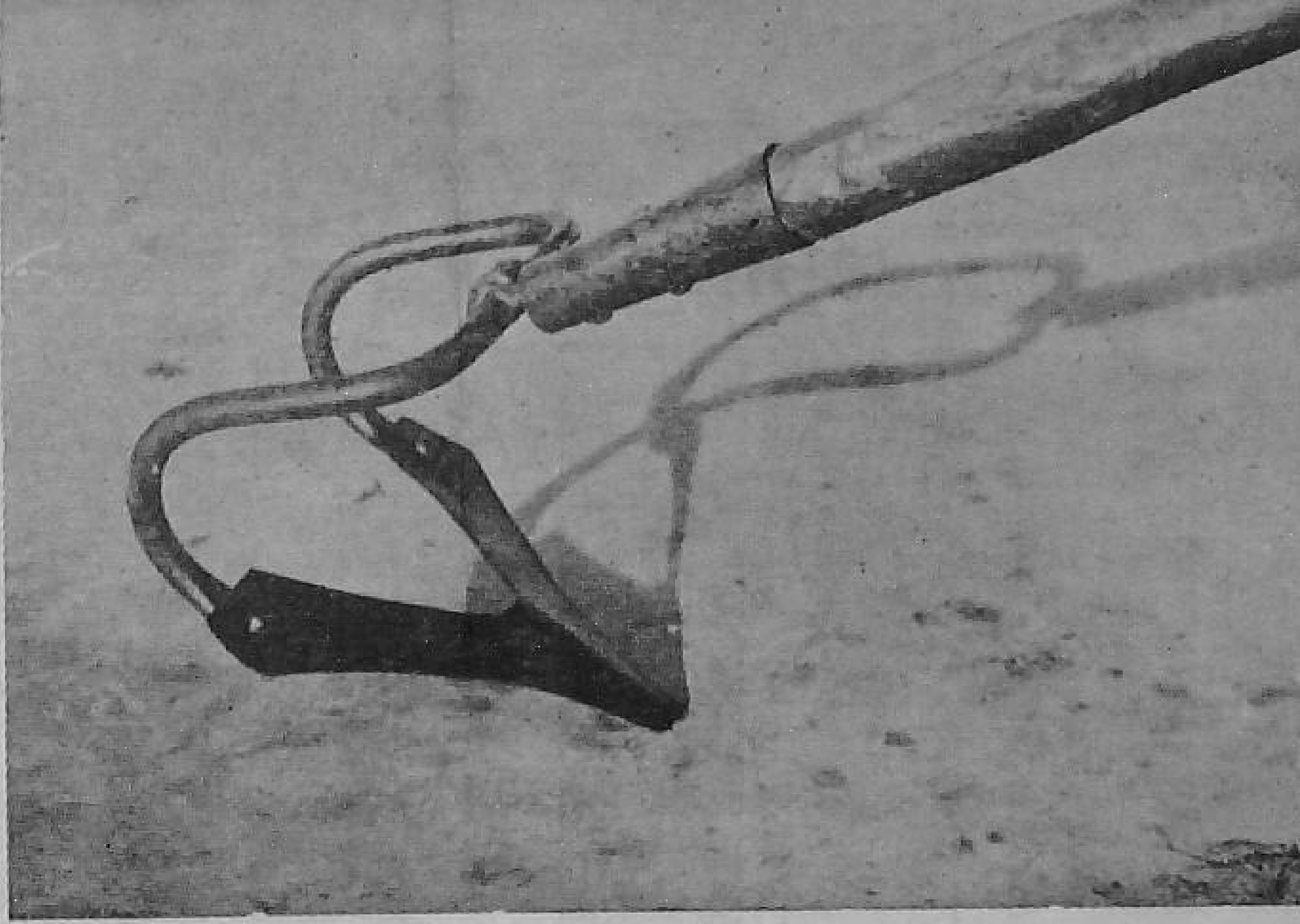
The farmers, not satisfied with just these manures alone, also give 400 pounds of ammonium sulphate or some other nitrogenous fertilizer to an acre.

The crop is harvested after 100 days of planting. The plants are cut and left in the field for about a day. They are then collected, tied and stored in *pandals* for 18 days. Three to four leaves from the bottom are removed and are graded as second grade tobacco.

The plants are then removed from the *pandals* and kept for about five days. Next, they are rearranged and again kept for five more days. They are then tied into small bundles and sent to the market.

Paddy, grown after tobacco, also gets the benefit of the heavy manuring given to the tobacco crop. That is the main reason why rich paddy crops are not uncommon here.

—M.C.N.



SHARMA HOE

FOR A FASTER JOB

By D. N. KHERDEKAR

WHETHER for field crops or garden crops, you can safely replace *khurpi* with Sharma Hoe for the weeding operation.

Farmers in the Delhi area and elsewhere can tell you how good this weeding Hoe is.

Costing only three rupees, you can work four to five times faster than what you can with the traditional *khurpi* !

The Hoe has a V-shaped sharp blade and a five feet long bamboo handle. So you can operate it even while standing. The sharp blade cuts the grass and the soil very easily. It is so convenient to handle that even a boy can use it with ease.

However, remember to sharpen the blade each time before use, if you want to get a good job out of it.

Weeding is perhaps the best way to increase yield without much investment, and Sharma Hoe is the best implement for doing it.

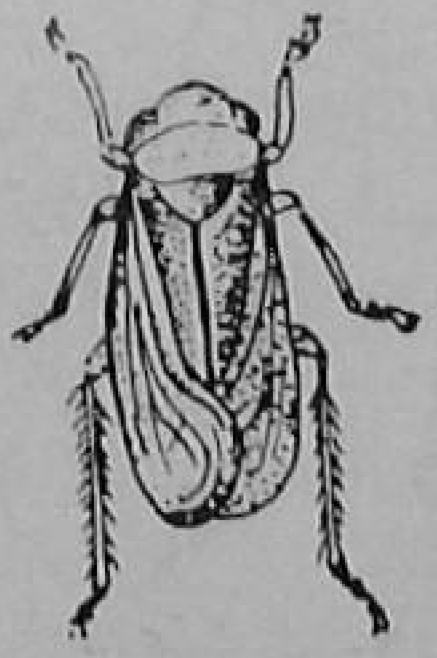
Keeping RICE pest free

By D. B. REDDY

FROM the time you sow rice, you have to protect it against the attack by the many insects and diseases. You must have already treated your paddy seed with an organo-mercurial compound to control the diseases which are carried with the seed. In the nursery stage, you must also have sprayed the seedlings to control the stem borer, and blast and helminthosporium diseases.

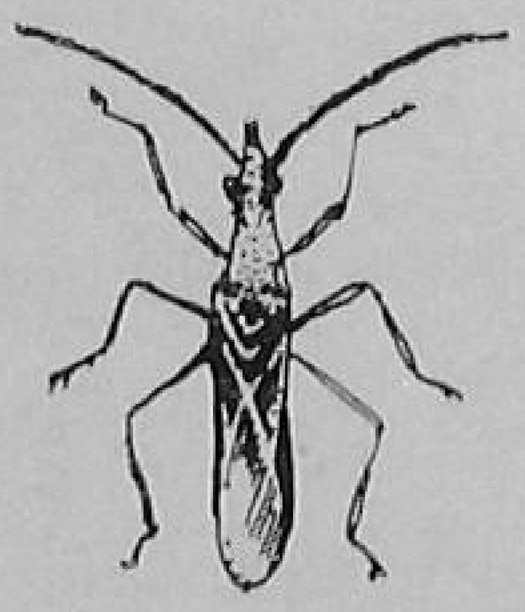
Many more insects may yet attack your standing rice crop. The rice hispa is one of those that may cause trouble. This is a small bluish black beetle with many short spines on its body. It scrapes the green matter from the leaves and the attacked leaves dry up and appear brownish yellow. The larva of the hispa also feeds on the green matter within the leaf tissue. Actually, the larva and the pupa live within the leaf tissue, and it is only the adult which comes out. The damage caused by the rice hispa is often serious.

But it is easy to control this insect. Before transplanting, clip off the tips of the seedlings and burn them to kill eggs and larva of the hispa which might be inside the leaf tissue. If the insect attacks the crop, dust 5 per cent BHC at 15 to 20 pounds per acre.



Leaf hopper

The other insect which can cause trouble is the swarming caterpillar. As the name indicates, the caterpillars move in swarms like an army from one field to another destroying them as they move on. The caterpillars are smooth, cylindrical and dark to pale green in colour with dull stripes on the back and on the sides. These are the caterpillars of a stout dark brown moth which does not feed on rice and may not easily be seen in the fields. The swarming caterpillars eat away the green portions of the rice plants.



Gundhi bug

You can easily control them by dusting with 10 per cent BHC, or spraying with 'Endrin' 0.03 per cent or DDT 0.25 per cent. But spraying or dusting only your own fields will not be of much help. Your neighbours also should take up the control measures. For this, you should pool all the dusters and sprayers in the village and see that the entire village or even all the villages in your Block take up the dusting or spraying. Community action is of great importance in fighting the swarming caterpillar.

You may find your rice crop also attacked by the caseworm and the jassids. The caseworm causes heavy damage where rice is grown in swampy areas. The caterpillars are greenish in colour. They cut the paddy blades into short pieces and build tube-like cases in which they remain and feed on the leaves.

The jassids are small insects which hop about and swarm in large numbers. These suck the sap from the plant and almost drain it to the point of drying.

The caseworm can be controlled by dusting 5 per cent BHC or by spraying 0.25 per cent BHC. It is better that you drain the fields if the attack is severe. You can control the jassids by dusting the crop with 5 per cent DDT or 10 per cent BHC at 15 to 20 pounds per acre or 0.15 per cent DDT spray at 30 to 40 gallons per acre.

Paddy grasshopper

You may find helminthosporium and blast diseases attacking the rice crop. Spray 5:5:50 Bordeaux mixture or a copper fungicide (containing 50 per cent metallic copper) one pound in 30 gallons of water at 40 to 50 gallons per acre.

Paddy needs w

...water, but how much?

By H. C. NANJIAH

NO DOUBT paddy needs plenty of water throughout its life time, but this varies with the different stages of its growth.

If you supply the correct amount of water during these stages, you will get better paddy yields. Of course, this would mean controlling the field water as and when necessary.

NURSERY STAGE

Rice plants do not need standing water in the nursery stage. If you keep the nursery plot always flooded, the growth of the plants will be badly affected and they will tiller poorly. Better irrigate at regular intervals to keep the bed moist. This will lead to better root development and tillering.

But do flood the plot once, one or two days before you pull out the plants for transplanting to avoid injury to the roots.

VEGETATIVE GROWTH STAGE

After transplanting, have three to four inches of standing water in the field for seven to ten days. This will help the seedlings in developing their roots further. Gradually reduce this level of water to 1½ to 2 inches, and maintain it for 30 to 40 days. This is when the tillers will bear the panicles. Overirrigation at this time will only encourage the formation of large numbers of tillers which will not bear any grain. After this, about 37 days before grain formation, drain out the water from the field completely and leave it that way for five to seven days.

GRAIN FORMATION STAGE

See that the plants do not suffer from want of water at this stage. Otherwise it will result in poor grain formation and thus the yield will go down. Hence, let in water again to a level of three to four inches at this stage.

RIPENING STAGE

When the ripening stage comes, which lasts for about 25 to 30 days after flowering, reduce the water level to 1½ to 2 inches. Stop irrigating 7 to 10 days before harvesting.

Irrigate your paddy at the proper time and give water in the right quantities—this will result in high yields.

Deep litter

THE BETTER PROFIT METHOD

By S. G. IYER

MANY poultry keepers who raise the birds confined in houses all the year round are now providing a layer of deep litter on the floors of such houses. This is a good practice.

A six-inch deep layer of litter on the floor keeps the birds healthy, and also adds to their comfort. Birds raised in such houses are found to lay 10 per cent more eggs, and the eggs obtained are clean. The birds also have little trouble from worms and coccidiosis and they do not develop bad vices like feather picking or egg eating, when raised on deep litter. Besides all these, you will find the litter a valuable manure after a year.

There are various cheap and locally available materials which you can use as litter, like wheat straw, paddy straw, dry hay and dry leaves cut into pieces, or paddy husk, or groundnut shells and dry cow-dung or saw-dust. Do not use sand as litter. Spread the litter six inches deep on the floor before you bring in the birds. Better start the litter house one or two months prior to monsoon.

The litter material and the droppings

that fall on it together produce heat which kills many disease-germs in the litter layer. And the birds have less trouble from worms and coccidiosis.

Take care that the roof of the poultry house does not leak as otherwise the litter will get wet and there will be wet patches on the floor. In case the litter gets wet, add hydrated lime at one pound for every eight square feet of the floor area. The floor of the house should be made of cement concrete or earth.

Stir the litter from time to time to mix the droppings with it. Add fresh litter now and then to maintain the original level of the litter layer. See that the house is well ventilated, and the litter is always dry.

Essential vitamins such as B12 and riboflavin are built up in the litter. Birds take these and add up to their daily diet.

Avoid overcrowing birds in deep litter houses by providing each bird with four square feet of floor space. Birds in litter houses feel happy and produce the maximum number of eggs.

Provide a mash hopper in the house which can hold a week's supply of food. Also provide nest boxes (community type). Use shallow vessels for watering the birds to prevent the litter from getting wet.

Chicks grow better on deep litter. In a 10 feet by 10 feet room you can keep 100 chicks till they are 8 to 10 weeks old. After this, thin them out. This practice is good where you raise poultry for meat and market the birds at early ages.

When the litter layer is a year old, remove and use it as manure. It contains two per cent nitrogen, three to four times more than what compost or farmyard manure contains.

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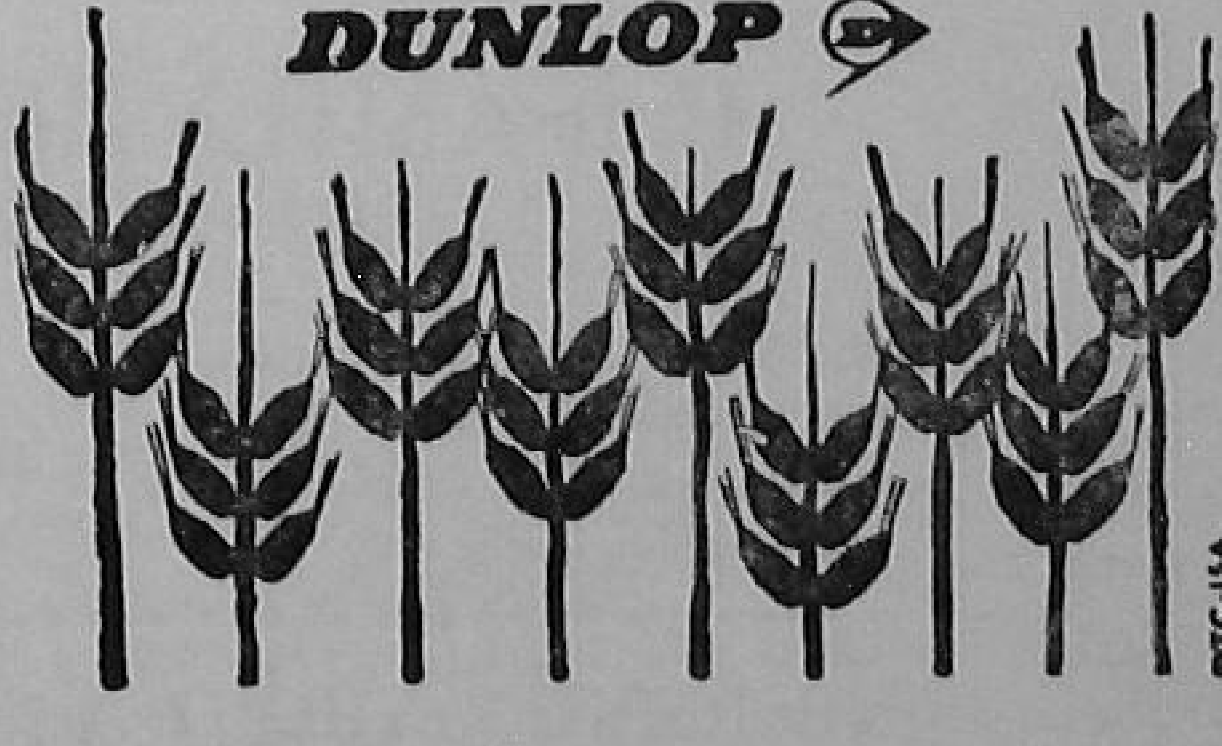

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If you like BREADFRUIT, grow it

By M. C. NAYAR

IF YOU like breadfruit, then why not have the breadfruit tree right in your own garden ? A few breadfruit trees will give you enough fruits; when you get more than what you want you can sell and make some money too.

The fruits are delicious and nutritious. They can be used as vegetables as well. Many housewives prepare a number of tasty dishes from the fruit.

Breadfruit is a tropical tree. You can grow it in areas which enjoy a warm and humid climate and receive 80 to 100 inches of rainfall in a year.

Breadfruit grows well on a laterite red loam soil with a high amount of organic matter in it. Also see that the soil is at least five to six feet deep and is fairly well-drained.

There are two varieties of breadfruit—one, the seeded, and the other seedless one. The first one you can raise by sowing the seed. This variety is not so commonly grown. The other, which is popular, is raised from root suckers or root cuttings.

To obtain root suckers dig out the soil-from a small area near the base of the tree. Next, make a wound in the root. The root suckers will grow from here. Another method is to collect roots 1½ inches in diameter and 1½ to 2 feet long and plant in horizontally dug shallow pits. Cover the roots leaving two or three inches of the thick portion above-ground. Root suckers will emerge from here.

PLANTING

Dig out three feet square pits ahead of the time of planting and fill them with a mixture of river sand, top soil and decomposed cattle manure or compost. During

You can prepare a number of tasty dishes from breadfruit

In addition to this, apply three to four pounds of superphosphate or bone-meal every year for four continuous years after planting the suckers.

There is one way of increasing the size and number of the fruits set—this is done by artificial pollination. Collect all the male flowers 10 days after they emerge and dust the pollen from these on the female flowers which are not less than three days old. You should do this in the morning hours.

the monsoon season, select healthy suckers and plant in these pits adopting a spacing of 35 to 40 feet between two plants.

The plant grows well under shady conditions also. You can, therefore, plant it under big trees. This will also help prevent sun-burn.

AFTER-CARE

Allow no weeds to come up. If there is no rain, water them regularly till they establish.

If you want more and better fruits, you must manure the plants well. Dig a shallow basin around the tree and apply about 50 to 100 pounds of cattle manure and two pounds of superphosphate in the monsoon season.

Breadfruit is not bothered by any serious pest or disease. The only known trouble is a disease caused by a fungus. As a result of this fungus attack, immature fruits shed. If you examine such fruits you will find a whitish growth on them. You can easily control the disease by spraying Bordeaux mixture. Spray the mixture about three to four times after the fruit-set at an interval of two weeks.

The breadfruit tree will start bearing from the fifth or sixth year onwards. You can obtain about 125 pounds of fruit from a tree per year, on an average.

Hence, a few breadfruits grown in home garden will not only give you the fruits you like but also will bring in a little money, if you care to sell the surplus fruits.

Raise Your Own Green Manure Seed

MANY of our farmers know that agriculture can never pay on a poor soil. That is why they are anxious to improve the soil fertility. But a want of timely supply of green fertilizers and their scarcity often make them feel helpless.

Farmers need not worry for this, as green manuring offers them an easy and cheap solution.

As a matter of fact a number of farmers in Kerala, Madras, Orissa and Uttar Pradesh are putting green manure to an extensive use in their lands and are getting bumper harvests.

GROW IT ANYWHERE

Once they raise the green manure crop on field borders or at odd corners in their farms, they get enough seed not only to sow and manure their fields but also some spare to sell and distribute to their neighbours. They are thus saved of the botheration of getting their fertilizer supply in time.

GROW IT WITHOUT LOSING A CROP

Farmers in these areas have also developed some effective ways of green manuring their fields without losing a season or a crop. For example, farmers in Orissa broadcast paddy seed mixed with *dhaincha* in the field.

A month after sowing, the *dhaincha* plants are uprooted during interculture and trampled in the soil. As a result, their paddy yields increase by at least 162 to 240 pounds to an acre.

CHOOSE ANY ONE OF THESE

It is not necessary for you to stick to *dhaincha* alone for green manuring. Depending on the type of your soil, climate and crops, you can choose your green manure from any one of the following :

Sannhemp, Indigo, Cowpea, Lobia, *Mung, Guar, Ipomea, Sesbenia, Glyricidia, Giant Hemp.*

Whatever may be the green manure you select, your soil is sure to benefit from it and you are bound to get a good crop.

For its many-sided benefit to soils and crops, green manure seed is being widely distributed to the farmers in almost all the states either free of cost or at a nominal price.

Your nearest Agricultural Officer will give you the right type of green manure seed you need for your area and will tell you how to raise it if you do not know it already.

Wherever you happen to farm, do not forget to ask for the supply of your green manure seed from your Gram Sevak or the nearest Agricultural Officer.

Once you grow it, you will know its advantages and would like to grow it regularly for all your crops.

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Why You Should Think of Proper Drainage

By D. S. DHESI

In areas where irrigation projects have been set up, farmers often use too much of water for irrigating their crop. This may be because they get water at cheap rates or because they are not quite sure about when their turn will come next. It is quite possible also that canal may get closed due to one reason or the other. At times, problem of surplus water in the field is caused by heavy rains. This problem becomes very serious in the irrigated areas where the fields are prepared with bunds all around. The water finding no outlet stands and stagnates in the field.

If this water is not drained out, the growth of the crop is stunted and the leaves turn yellow. If this excess of water continues to remain in the field for some time, the plants may even die off. Under such conditions there is no proper aeration of soil.

Lack of air together with high amount of moisture, damages the roots of the plants and also gives rise to many plant diseases. Too much of moisture also reduces the uptake of nutrients by the plants as the bacteria in the soil, which makes the manures and fertilizers easily available to the plants, needs both warmth and air to work.

Also, the seed for germination and the plant for its growth need warmth and air in the root zone. Wet soils are cold soils and take time to warm up. This checks the root growth and further limits the area from which the plants may draw their food.

Apart from all these, wet soil interferes with tillage and other cultural operations.

Water beyond field capacity is no doubt removed by surface run-off, seepage, percolation and transpiration. But these processes are often slow and cannot stop damage to crops.

This makes it necessary to resort to artificial drainage to remove surplus water from the soil surface faster.

In sandy soils the water percolates deep into the soil but creates many other problems. Drainage problem is greater in clay soils.

Excess water from the surface due to rain or too much of irrigation can be removed by surface drainage while to remove excess water from the soil profile and prevent it from percolating deep, sub-surface drainage is necessary.

At present what many farmers do is to transfer their own trouble to their neighbours' fields. This is no solution.

Efforts are now being made under the different projects launched in the country to construct field channels for proper drainage. For proper working of these channels, however, steps should be first taken to dispose of the surplus water from the farms.

By KANTHIMATHI KUMAR

FOR HOME-MAKERS

A SKIRT AND A JUMPER TO MATCH

WITH a little imagination, an old skirt can be changed into an attractive skirt and jumper for a girl.

Measurements:—For a girl whose chest measures 22 inches.

Fig. 1 (Skirt and Jumper—the new garment)

Fig. 2 (Indian Skirt—the old garment)

Jumper : Length 12″, Chest 22″, Shoulder width 9″, Sleeve length 5½″, Sleeve band 8″, Neck 10½″.

Skirt : Length 12″, Waist 21″.

I. HOW TO MAKE THE PATTERN-PIECES OF THE SKIRT AND THE JUMPER

- *General instructions for following the diagrams.*

(a) In the diagrams, the different measurements are given within arrows—the arrowheads showing the exact limits of the measurements. Wherever space does not permit, the measurements are given without the arrows or with the arrows pointing to the measured length. A few measurements are explained with reference to the alphabets in the diagrams and are given below the diagrams.

(b) In the diagrams, the thick lines (——) denote the lines along which the pattern is cut. The dotted lines (......) denote the lines along which the pattern is cut after the first cutting along the thick lines is done. The dash dot lines (—.—.—.) denote the lines used as a guide to draw the curves, etc.

(c) In the diagrams containing the word 'fold', the rectangle consisting of the pattern represents the folded paper taken for pattern-making. Therefore, while taking the paper for drafting the pattern, take double the width shown in the diagram in order to allow for the fold.

(d) Mark the different points, showing the limits of the measurements on the paper taken for pattern-making and draft the pattern as you proceed from point to point.

- *Particular instructions for making the pattern-pieces of the skirt and the jumper.*

(*i*) **The back and the the front of the bodice of the jumper** (*Fig. 3 and Fig. 4*). Draft the patterns of the back and the front of the bodice and cut along the thick lines. Along the central fold of the front, cut a slit 3″ down the centre of the neck.

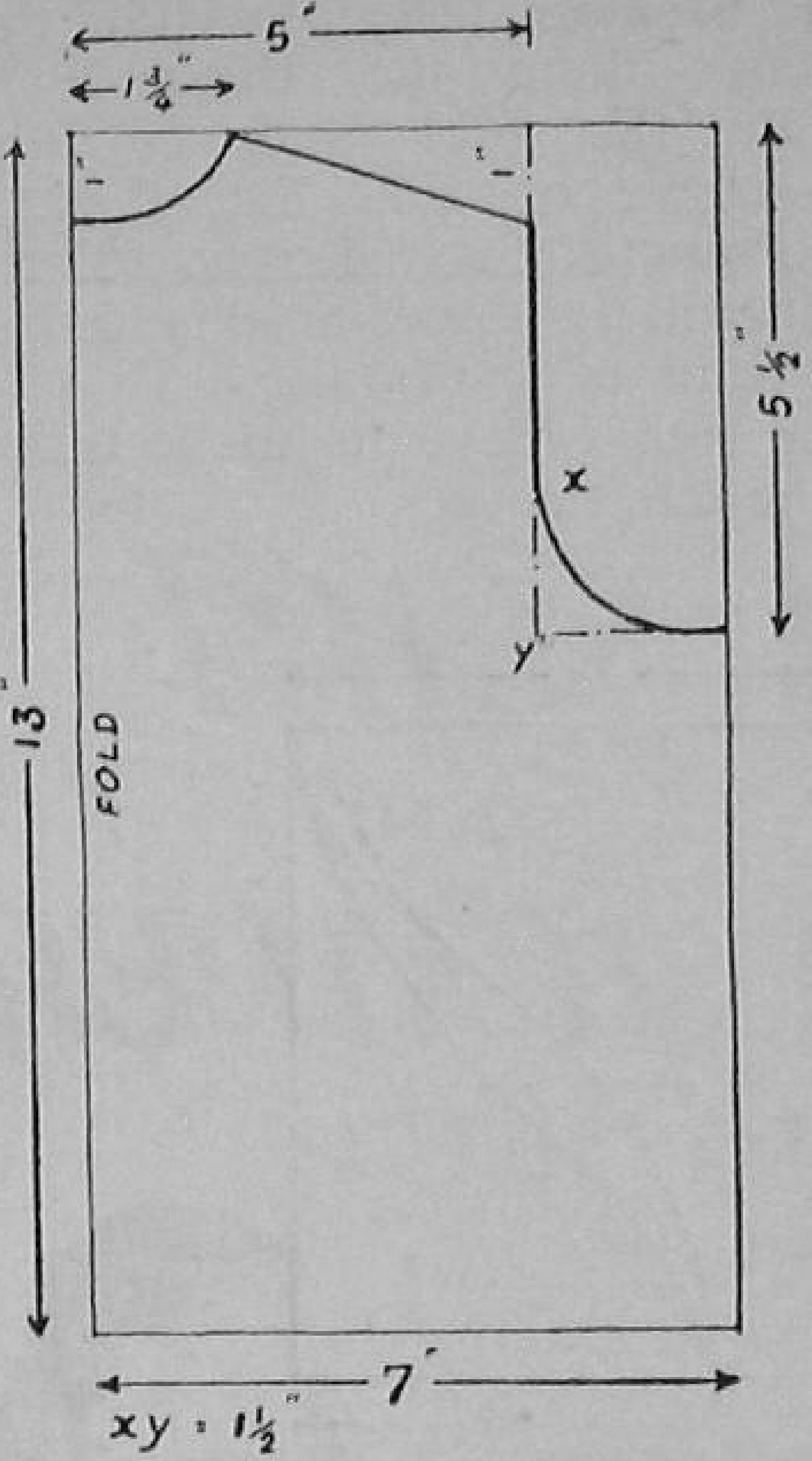


Fig. 3 (Back of jumper)

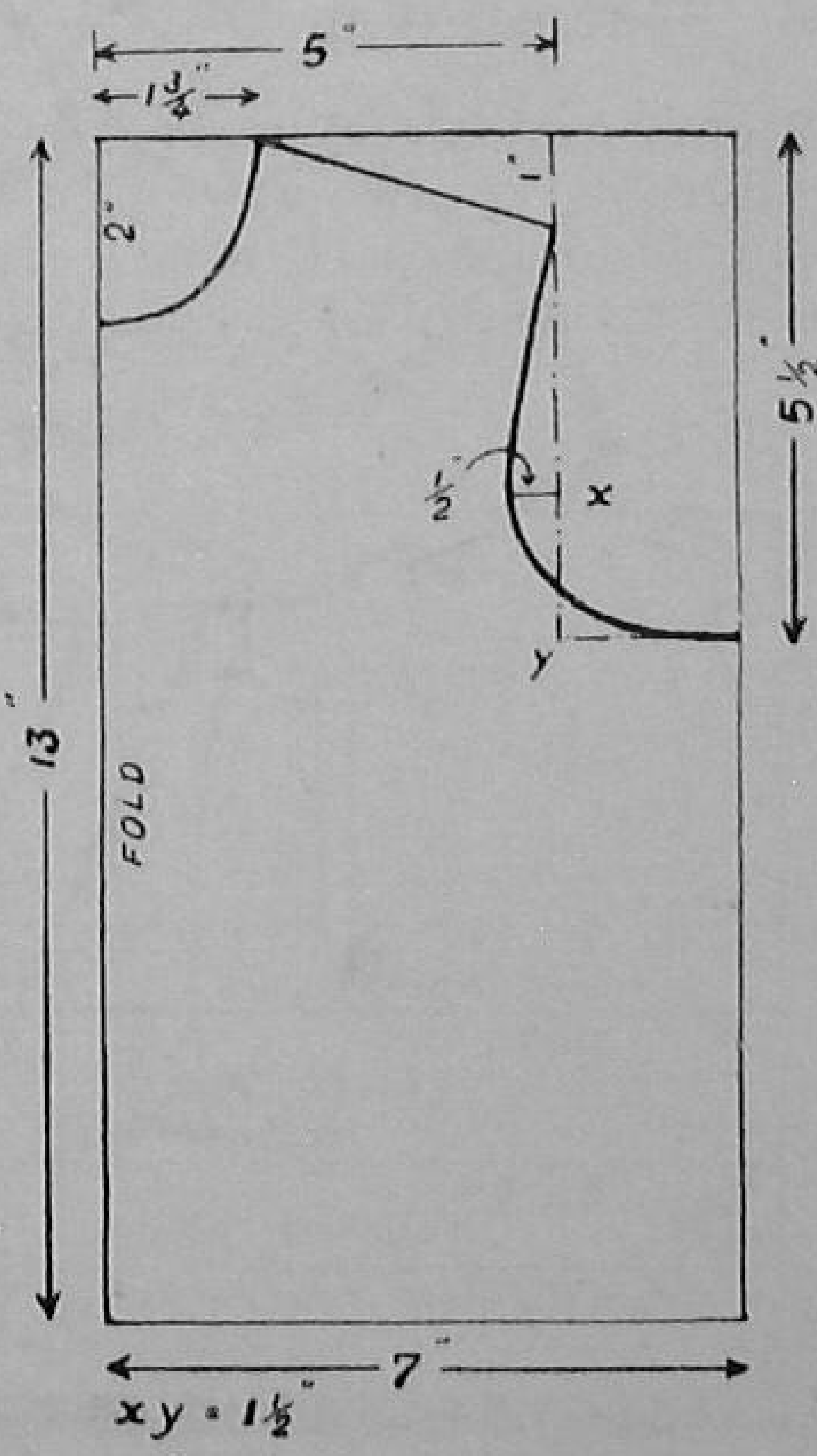


Fig. 4 (Front of jumper)

(*ii*) **Sleeves.** (*Fig. 5*) Draft the sleeves and cut along the thick lines first. Open out the fold and cut along the dotted curve on one half of the sleeves only. Prepare two sleeves. The portion cut deeper in the sleeve-head is to be attached to the front of the bodice. Therefore, note that the right sleeve is to be differentiated from the left sleeve.

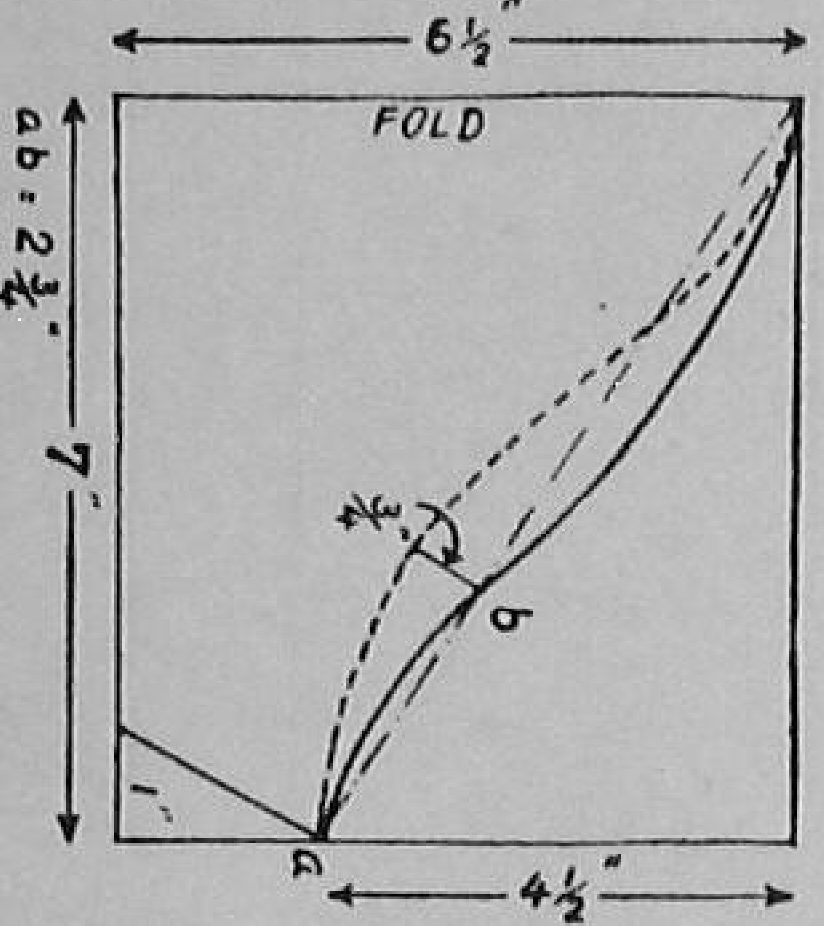


Fig. 5 (Sleeves : ¼ scale)

(*iii*) **Skirt** For the skirt, make two pattern pieces,—one 8½" wide and 56" long and the other 5" wide and 56" long, and mark them 'A' and 'B' respectively.

(*iv*) **Sleeve-bands and waist-bands.** For the sleeve-bands, cut two strips of paper each of which is 9" long and 1½" wide. For the waist-band, cut a strip 24" long and 2" wide.

(*v*) **Collar** (*Fig. 6*). Draft the pattern of the collar and cut along the thick lines. Prepare two collars.

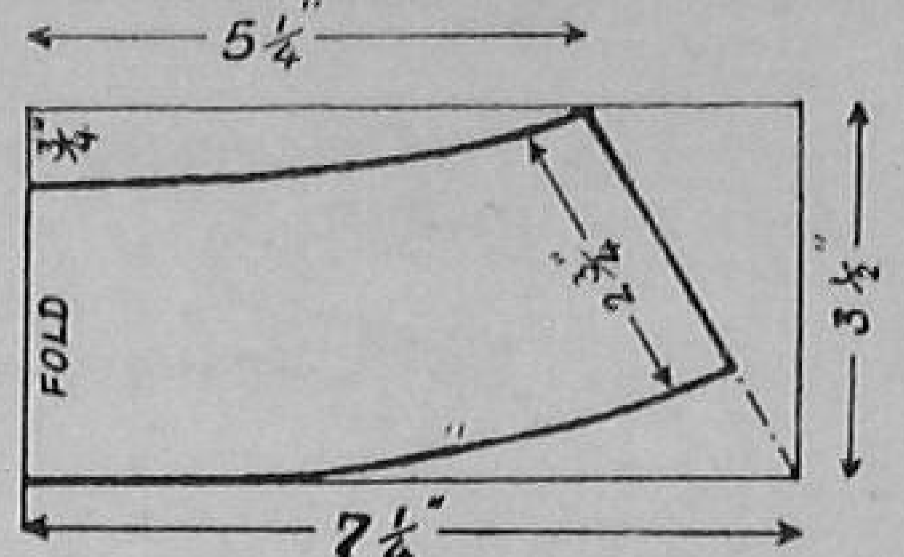


Fig. 6 (Collar: ¼ scale)

II. PREPARING THE OLD GARMENT FOR THE LAYOUT OF THE PATTERN-PIECES

Cut along the seam at the waist-line and remove the pleats. Open out the side-seam and iron the fabric flat. This particular Indian skirt when ironed flat is 72" long and 30" wide.

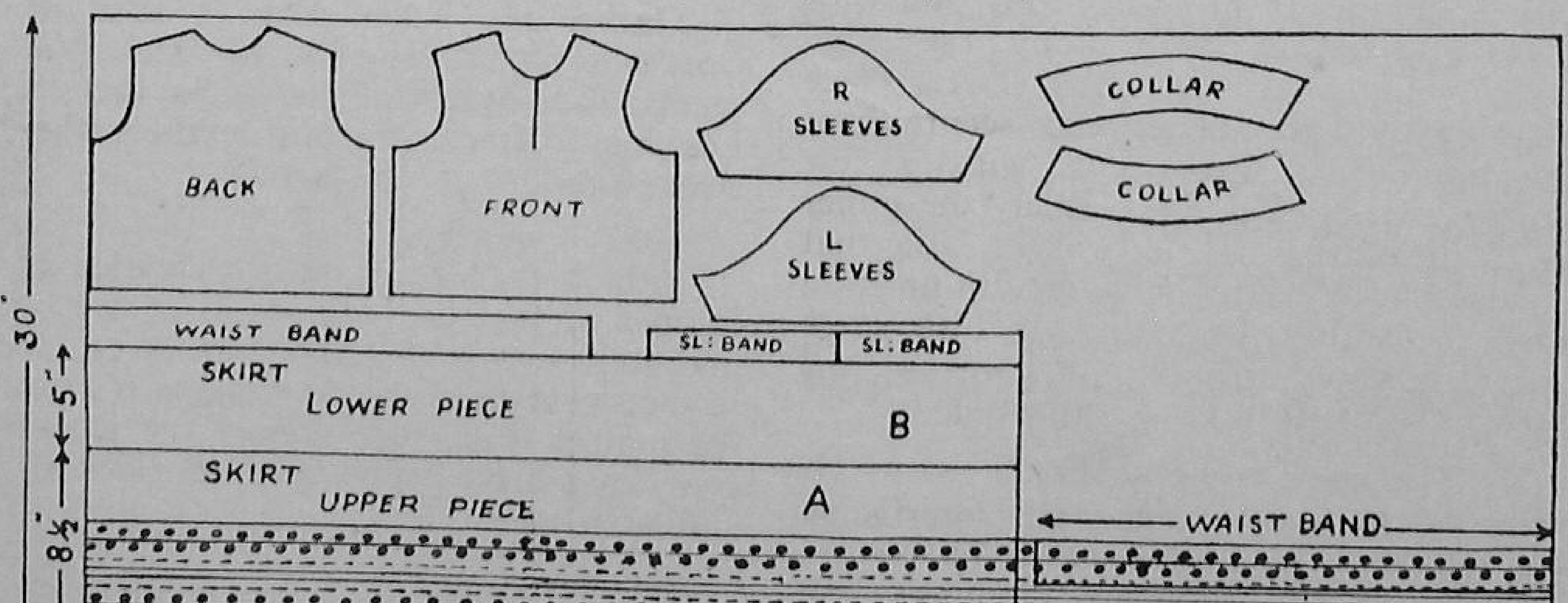
III. HOW TO LAY THE PATTERN-PIECES ON THE FABRIC AND CUT THE PATTERN (FIG. 7)

Pin the pattern pieces to the fabric as shown in Fig. 7 and cut the different pattern pieces. The facing and the band for the side-opening of the skirt are to be cut from the small bits of fabric left over. Canvas or long cloth may be used as interfacing for the waist-band to keep it stiff.

Note :—In the diagram

R=Right
L=Left
Sl=Sleeve

Fig. 7 (Layout of pattern-pieces)



(A half-inch is allowed for ordinary seams and 1/8- inch for bands)

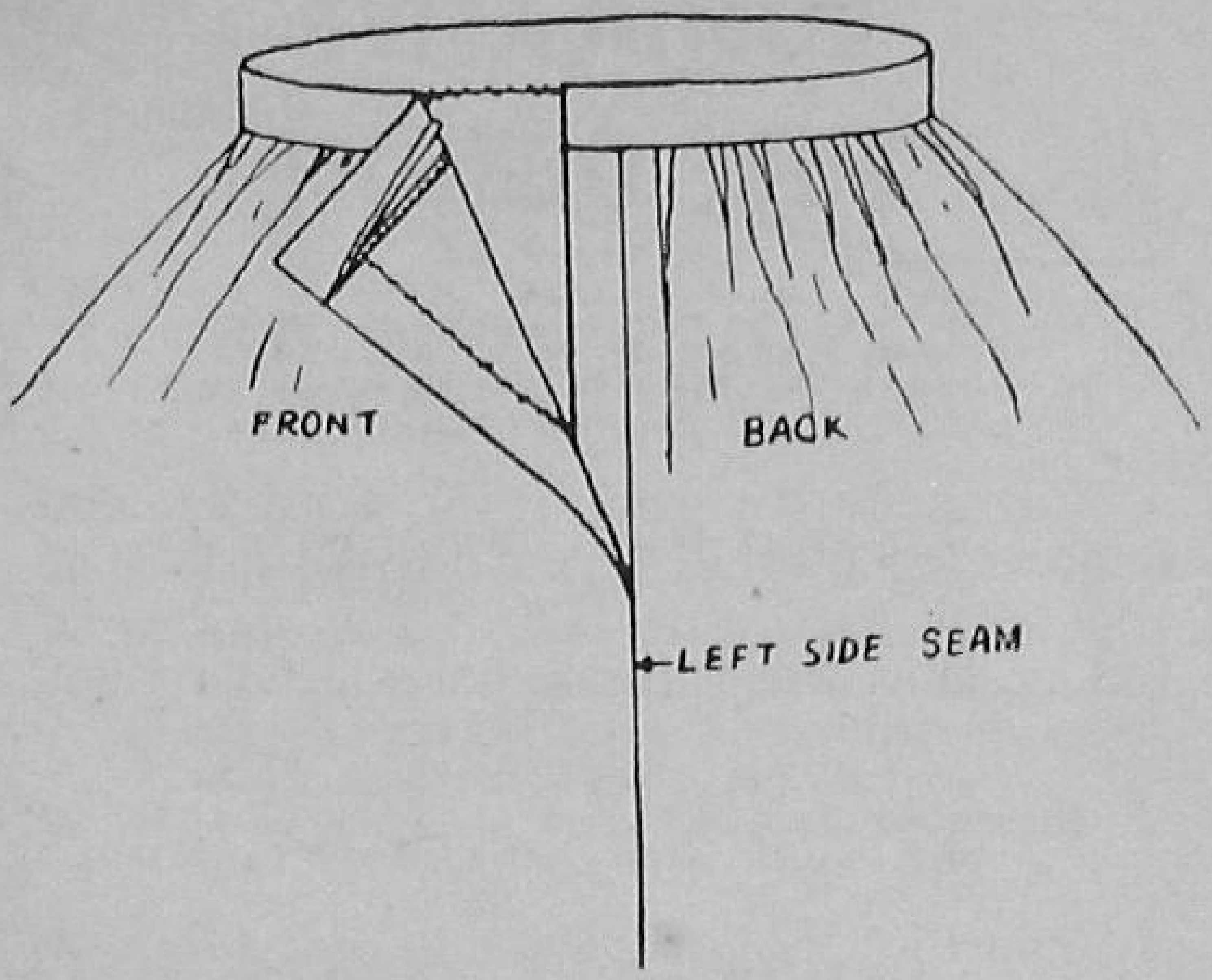


Fig. 8 (Side-opening of the skirt)

Skirt : For the skirt, join the two pieces 'A' and 'B' so that 'B' is below 'A'. Note that the border runs across the middle of the skirt. Make the side seam, leaving 3″ free below the waist-line to form the side opening which will be to the left of the skirt.

Make a facing along the edge of the opening of the front skirt and make a protruding band 1″ wide, along the edge of the opening at the back skirt. Place the facing over the band and secure them in position at the lower end with a few invisible stitches (Fig. 8). Gather the upper edge of the skirt to fit the waist. Note that the side placket is to be pinned in position before measuring the waist (a little extra fabric is allowed in the turnings of the waist-band for future adjustments).

Fix the canvas or long cloth interfacing inside the waist-band and attach it to the skirt. Sew the necessary hooks and eyes for the waist-band and the side-placket. The waist should be fitted tight.

Jumper : Make the shoulder seams and the side seams, leaving 2½″ free at the lower end of the left side seam for the side opening. Face the edge of the side opening of the front and make a protruding band at the back.

Fix the facing over the band and secure them in position at the top with a few invisible stitches (Fig. 9). Bind the opening down the neck. Face the lower-end of the blouse with a strip of material 1½″ wide.

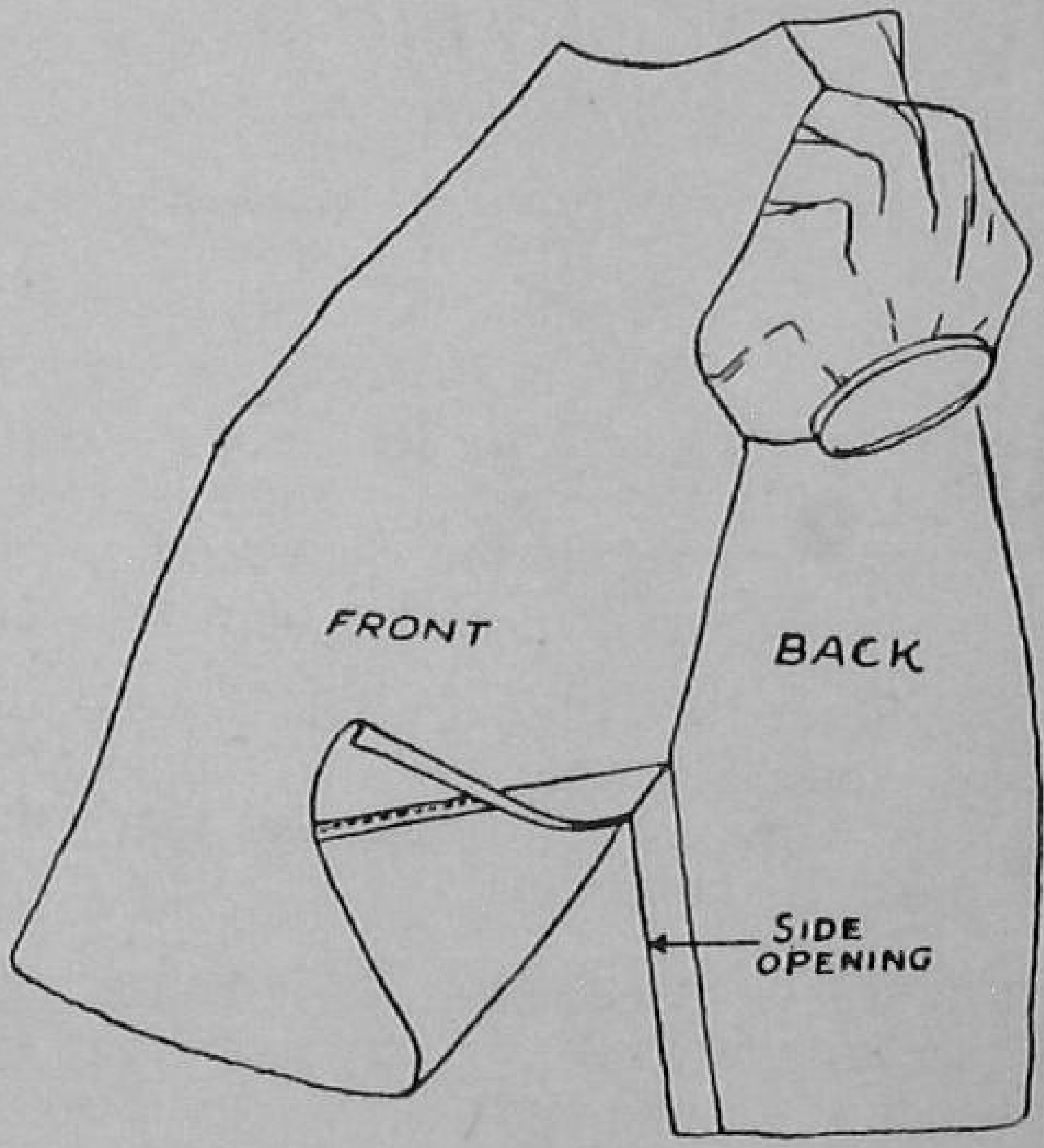


Fig. 9 (Side-opening of the jumper)

Gather the lower edge of each of the sleeves to fit the sleeve-band. Make the side seams and attach the bands to the sleeves. Leaving 2″ free from both ends, gather the sleeve-head to fit the armhole.

Attach the sleeves to the bodice of the jumper so that the side seams of the bodice and the sleeves match. The portion cut deeper in the sleeve-head should come to the front of the jumper (Fig. 10). Adjust the gathers at the sleeve-head evenly on both sides of the shoulder-line.

Place one collar over the other and join them together along the outer edge, allowing

½" for the seam. Turn the collar inside out and pin it to the neck so that the neck ends of the collar come to the edge of the binding at

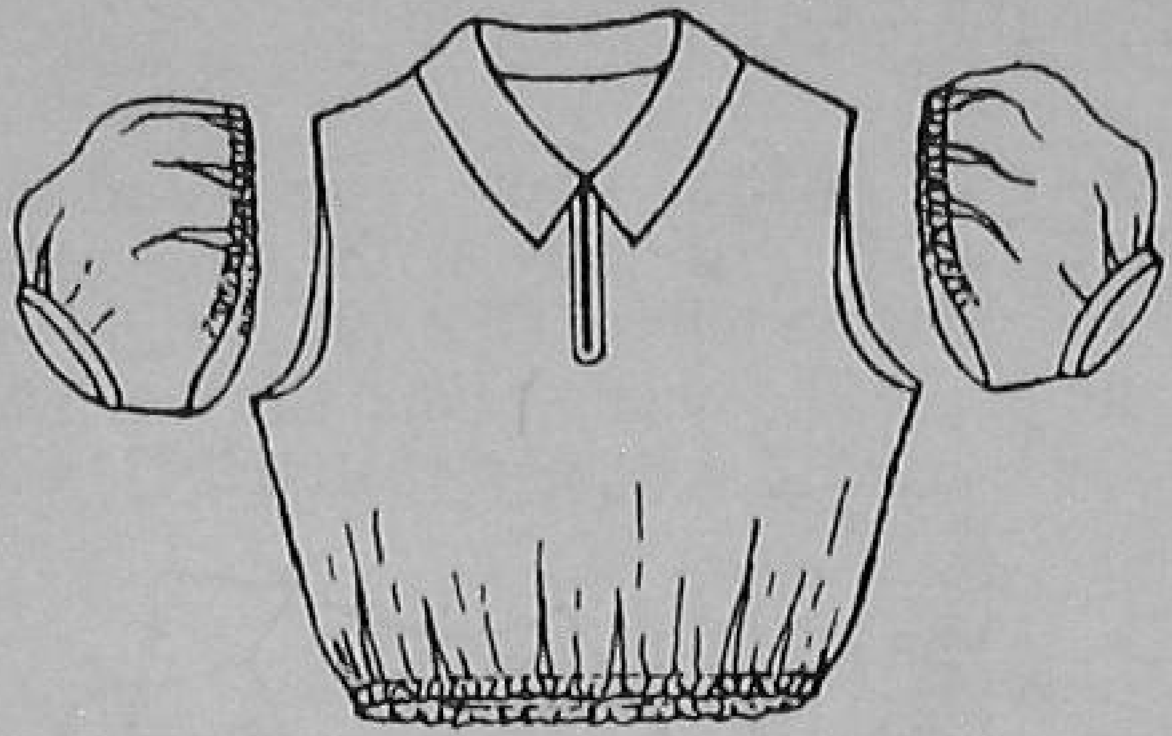


Fig. 10 (Bodice of jumper, sleeves placed side by side and elastic at lower end)

the neck opening and the centre of the collar coincides with the centre of the back neck. The circumference of the neck end of the collar will be slightly smaller than the neck of the jumper. This extra material must be adjusted neatly at the back of the neck for the good fitting of the collar. Fix the collar to the neck with a bias strip of material (Fig. 11). Sew the required number of buttons at the neck opening and the side opening and insert a piece of elastic at the lower end of the jumper to keep the waist tight (Fig. 10).

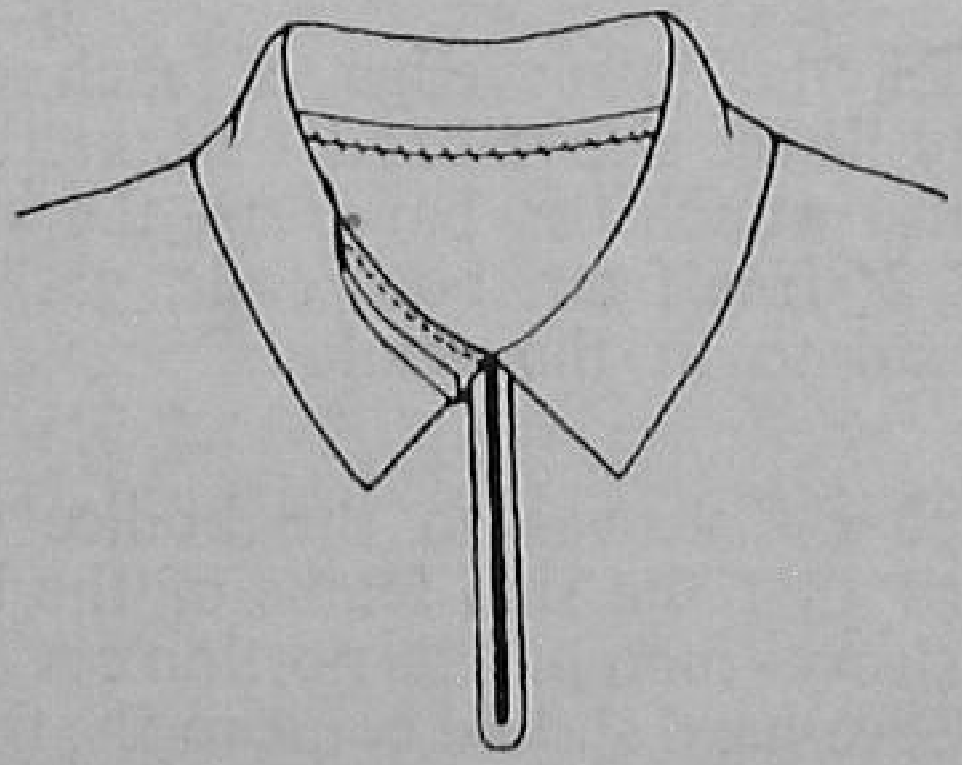


Fig. 11 (Attaching collar to the neck)

The remnant piece of the skirt may be used for making an underwear to match.

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